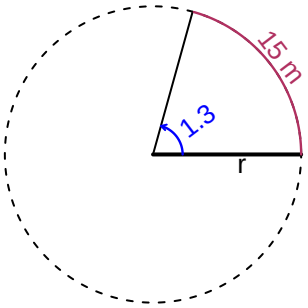
Name: Date:

Trig Final (Practice v0)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

Question 1

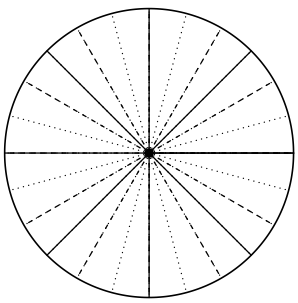
In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 1.3 radians. The arc length is 15 meters. How long is the radius in meters?



Question 2

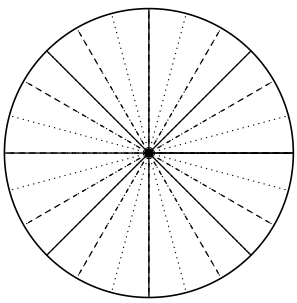
Consider angles $\frac{13\pi}{6}$ and $\frac{-11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{13\pi}{6}\right)$ and $\cos\left(\frac{-11\pi}{4}\right)$ by using a unit circle (provided separately).

Mark $\frac{13\pi}{6}$



Find $\sin(13\pi/6)$

Mark $\frac{-11\pi}{4}$



Find $\cos(-11\pi/4)$

Question 3

If $\cos(\theta) = \frac{39}{89}$, and θ is in quadrant IV, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -4.5$ meters, a frequency of 7.6 Hz, and an amplitude of 2.59 meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

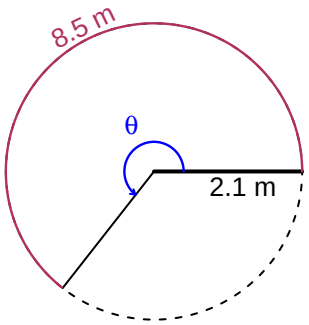
Name: Date:

Trig Final (Practice v1)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

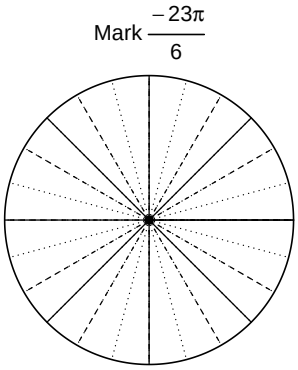
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 2.1 meters. The arc length is 8.5 meters. What is the angle measure in radians?

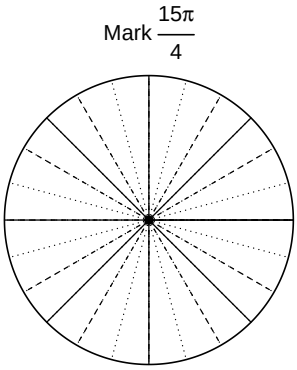


Question 2

Consider angles $\frac{-23\pi}{6}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-23\pi}{6}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-23\pi/6)$



Find $\sin(15\pi/4)$

Question 3

If $\sin(\theta) = \frac{-55}{73}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -2.34$ meters, a frequency of 7.08 Hz, and an amplitude of 5.52 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

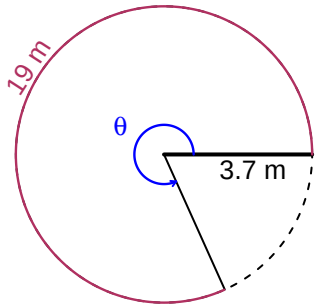
Name: Date:

Trig Final (Practice v2)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

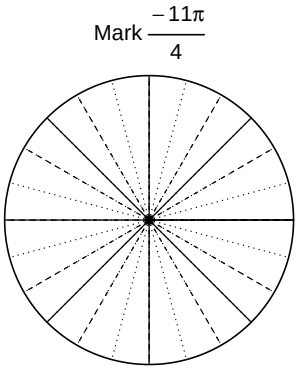
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 19 meters. The radius is 3.7 meters. What is the angle measure in radians?

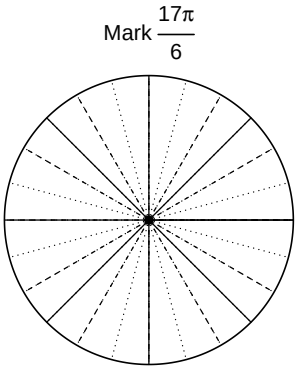


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{17\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-11\pi}{4}\right)$ and $\sin\left(\frac{17\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(-11\pi/4)$



Find $\sin(17\pi/6)$

Question 3

If $\cos(\theta) = \frac{36}{85}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 6.81 Hz, a midline at $y = -8.44$ meters, and an amplitude of 2.29 meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

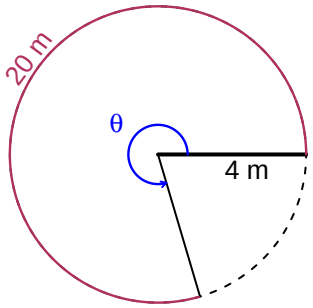
Name: Date:

Trig Final (Practice v3)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

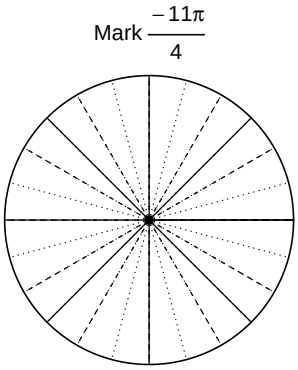
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 4 meters. The arc length is 20 meters. What is the angle measure in radians?

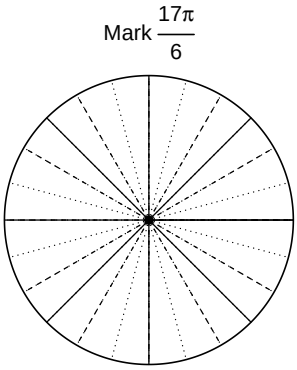


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{17\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-11\pi}{4}\right)$ and $\sin\left(\frac{17\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(-11\pi/4)$



Find $\sin(17\pi/6)$

Question 3

If $\sin(\theta) = \frac{-55}{73}$, and θ is in quadrant III, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -7.9$ meters, a frequency of 2.69 Hz, and an amplitude of 5.29 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

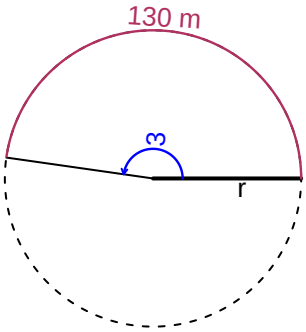
Name: Date:

Trig Final (Practice v4)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

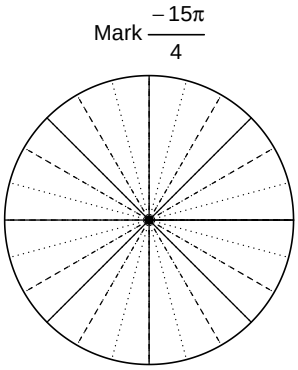
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3 radians. The arc length is 130 meters. How long is the radius in meters?

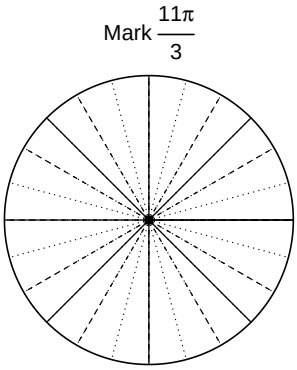


Question 2

Consider angles $\frac{-15\pi}{4}$ and $\frac{11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-15\pi}{4}\right)$ and $\sin\left(\frac{11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(-15\pi/4)$



Find $\sin(11\pi/3)$

Question 3

If $\cos(\theta) = \frac{48}{73}$, and θ is in quadrant IV, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 5.13 Hz, a midline at $y = -7.98$ meters, and an amplitude of 6.24 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

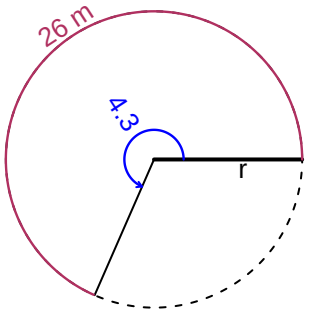
Name: Date:

Trig Final (Practice v5)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

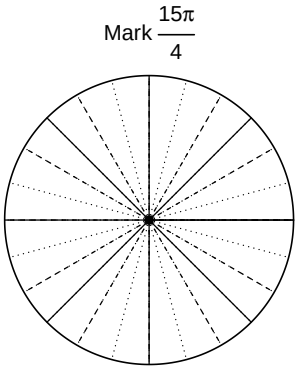
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 4.3 radians. The arc length is 26 meters. How long is the radius in meters?

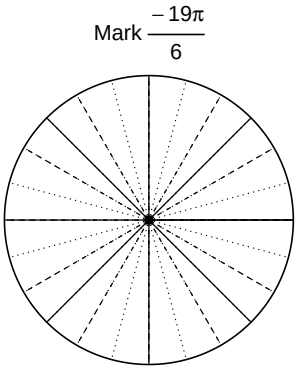


Question 2

Consider angles $\frac{15\pi}{4}$ and $\frac{-19\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{15\pi}{4}\right)$ and $\cos\left(\frac{-19\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(15\pi/4)$



Find $\cos(-19\pi/6)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 2.12$ meters, a frequency of 3.6 Hz, and an amplitude of 8.98 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

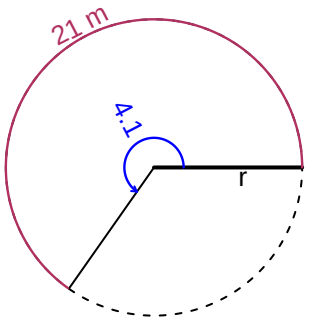
Name: Date:

Trig Final (Practice v6)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

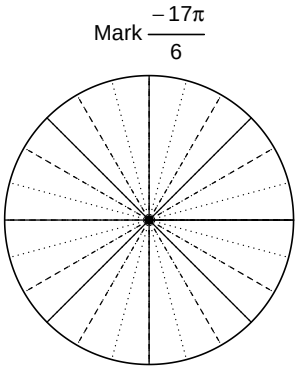
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 21 meters. The angle measure is 4.1 radians. How long is the radius in meters?

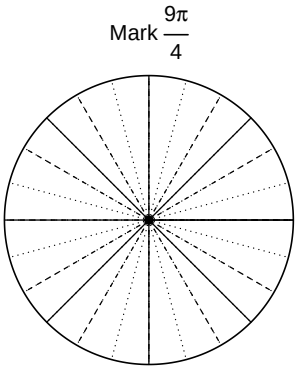


Question 2

Consider angles $\frac{-17\pi}{6}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-17\pi}{6}\right)$ and $\sin\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-17\pi/6)$



Find $\sin(9\pi/4)$

Question 3

If $\sin(\theta) = \frac{21}{29}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 5.18 meters, a frequency of 3.55 Hz, and a midline at $y = -7.34$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

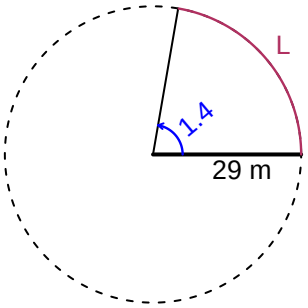
Name: Date:

Trig Final (Practice v7)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

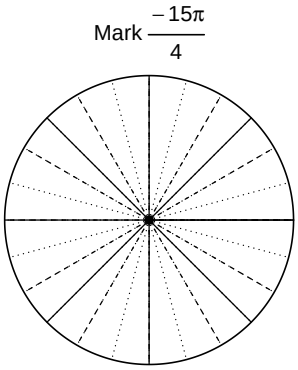
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 29 meters. The angle measure is 1.4 radians. How long is the arc in meters?

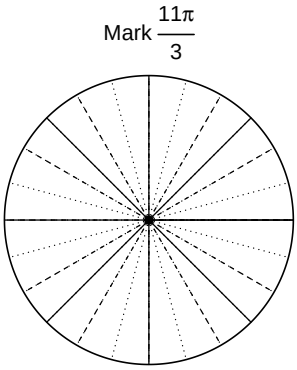


Question 2

Consider angles $\frac{-15\pi}{4}$ and $\frac{11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-15\pi}{4}\right)$ and $\cos\left(\frac{11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-15\pi/4)$



Find $\cos(11\pi/3)$

Question 3

If $\tan(\theta) = \frac{-55}{48}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 3.02 meters, a frequency of 5.58 Hz, and a midline at $y = -6.87$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

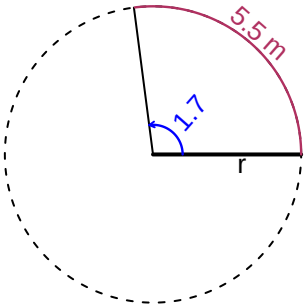
Name: Date:

Trig Final (Practice v8)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

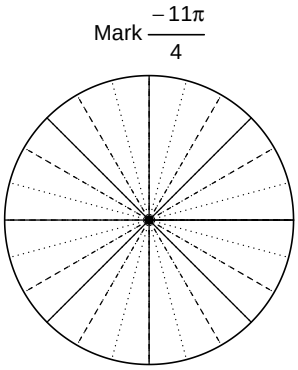
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 1.7 radians. The arc length is 5.5 meters. How long is the radius in meters?

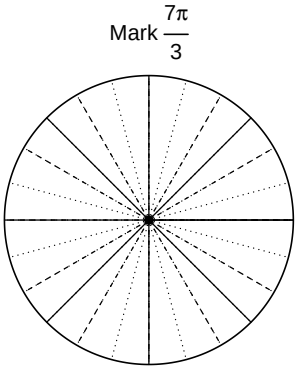


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{7\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{4}\right)$ and $\cos\left(\frac{7\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/4)$



Find $\cos(7\pi/3)$

Question 3

If $\tan(\theta) = \frac{35}{12}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 3.95 Hz, an amplitude of 7.8 meters, and a midline at $y = 2.77$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

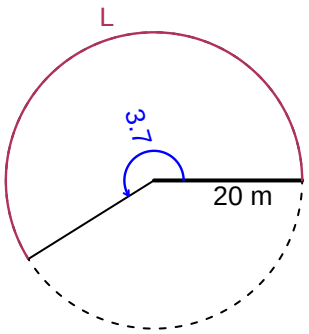
Name: Date:

Trig Final (Practice v9)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

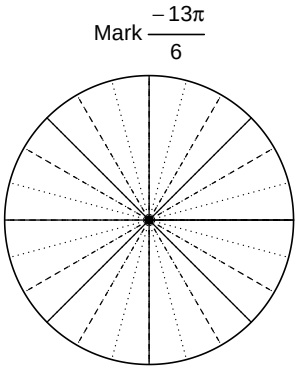
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3.7 radians. The radius is 20 meters. How long is the arc in meters?

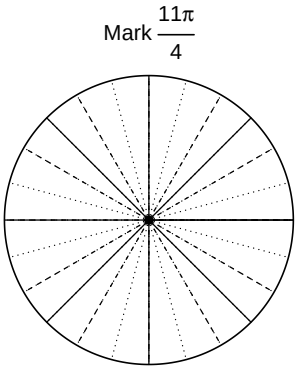


Question 2

Consider angles $\frac{-13\pi}{6}$ and $\frac{11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-13\pi}{6}\right)$ and $\cos\left(\frac{11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-13\pi/6)$



Find $\cos(11\pi/4)$

Question 3

If $\sin(\theta) = \frac{-77}{85}$, and θ is in quadrant IV, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 8.49 meters, a frequency of 6.31 Hz, and a midline at $y = -4.91$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

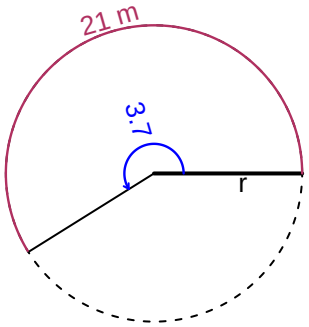
Name: Date:

Trig Final (Practice v10)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

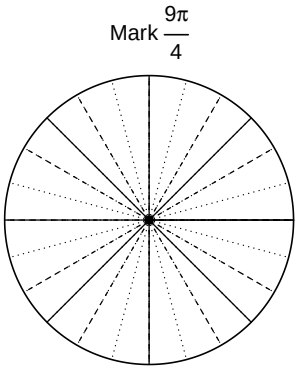
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 21 meters. The angle measure is 3.7 radians. How long is the radius in meters?

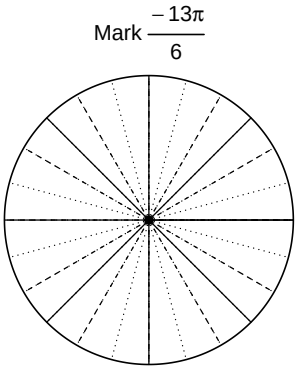


Question 2

Consider angles $\frac{9\pi}{4}$ and $\frac{-13\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{9\pi}{4}\right)$ and $\sin\left(\frac{-13\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(9\pi/4)$



Find $\sin(-13\pi/6)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 8.23 meters, a frequency of 5.62 Hz, and a midline at $y = -4.24$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

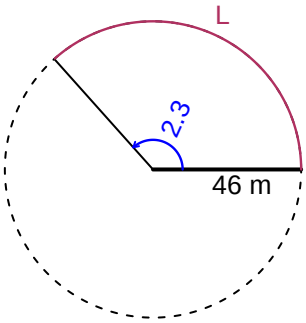
Name: Date:

Trig Final (Practice v11)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

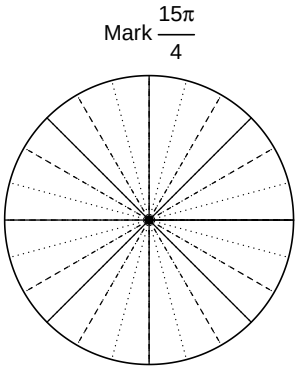
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 46 meters. The angle measure is 2.3 radians. How long is the arc in meters?

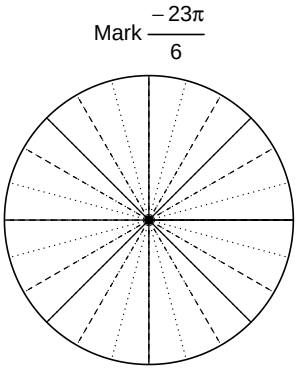


Question 2

Consider angles $\frac{15\pi}{4}$ and $\frac{-23\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{15\pi}{4}\right)$ and $\cos\left(\frac{-23\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(15\pi/4)$



Find $\cos(-23\pi/6)$

Question 3

If $\sin(\theta) = \frac{-55}{73}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 2.94 meters, a midline at $y = -4.44$ meters, and a frequency of 8.24 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

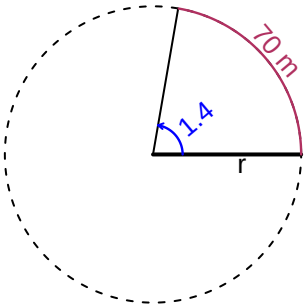
Name: Date:

Trig Final (Practice v12)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

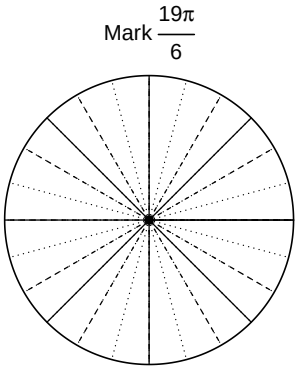
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 1.4 radians. The arc length is 70 meters. How long is the radius in meters?

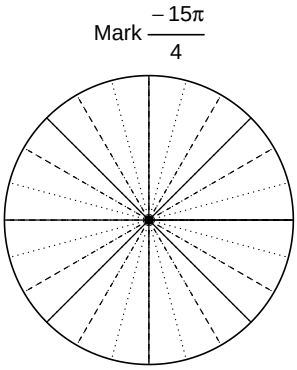


Question 2

Consider angles $\frac{19\pi}{6}$ and $\frac{-15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{19\pi}{6}\right)$ and $\cos\left(\frac{-15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(19\pi/6)$



Find $\cos(-15\pi/4)$

Question 3

If $\tan(\theta) = \frac{-72}{65}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 8.31 Hz, an amplitude of 3.13 meters, and a midline at $y = -5.62$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

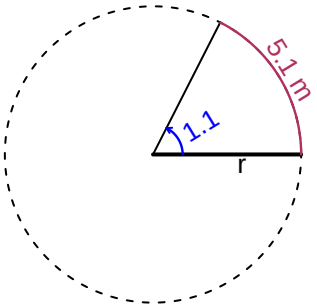
Name: Date:

Trig Final (Practice v13)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

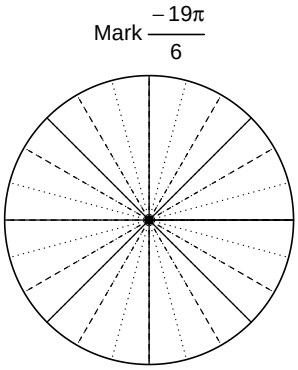
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 5.1 meters. The angle measure is 1.1 radians. How long is the radius in meters?

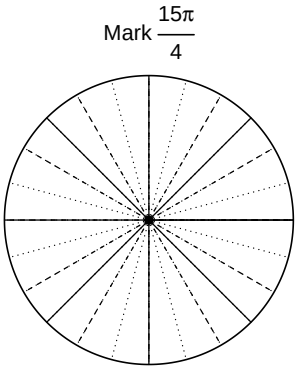


Question 2

Consider angles $\frac{-19\pi}{6}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-19\pi}{6}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-19\pi/6)$



Find $\sin(15\pi/4)$

Question 3

If $\tan(\theta) = \frac{-63}{16}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 6.22 meters, a midline at $y = 4.9$ meters, and a frequency of 3.19 Hz. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

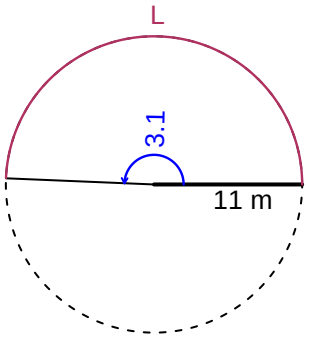
Name: Date:

Trig Final (Practice v14)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

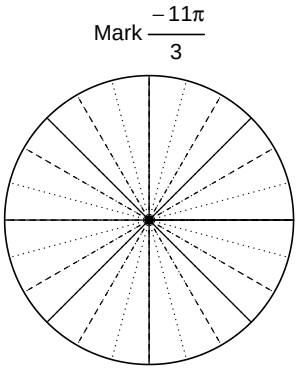
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 11 meters. The angle measure is 3.1 radians. How long is the arc in meters?

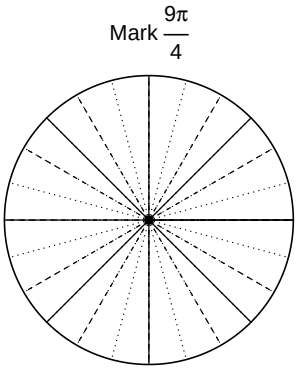


Question 2

Consider angles $\frac{-11\pi}{3}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-11\pi}{3}\right)$ and $\sin\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-11\pi/3)$



Find $\sin(9\pi/4)$

Question 3

If $\tan(\theta) = \frac{24}{7}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 4.37 Hz, an amplitude of 8.72 meters, and a midline at $y = -7.63$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

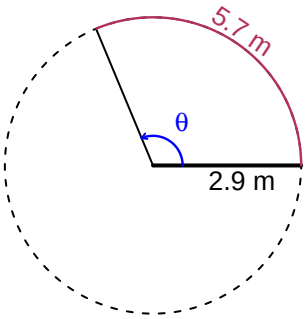
Name: Date:

Trig Final (Practice v15)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

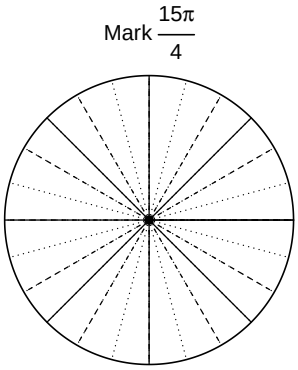
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 5.7 meters. The radius is 2.9 meters. What is the angle measure in radians?

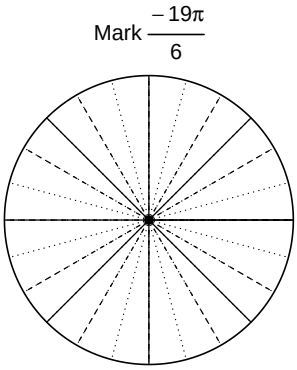


Question 2

Consider angles $\frac{15\pi}{4}$ and $\frac{-19\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{15\pi}{4}\right)$ and $\sin\left(\frac{-19\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(15\pi/4)$



Find $\sin(-19\pi/6)$

Question 3

If $\cos(\theta) = \frac{-20}{29}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 8.42 meters, a frequency of 2.38 Hz, and a midline at $y = 6.42$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

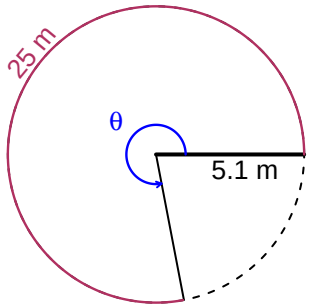
Name: Date:

Trig Final (Practice v16)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

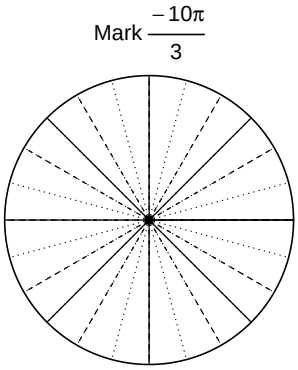
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 5.1 meters. The arc length is 25 meters. What is the angle measure in radians?

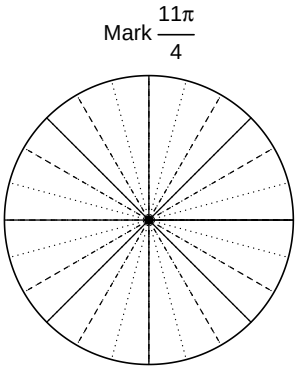


Question 2

Consider angles $\frac{-10\pi}{3}$ and $\frac{11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-10\pi}{3}\right)$ and $\sin\left(\frac{11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-10\pi/3)$



Find $\sin(11\pi/4)$

Question 3

If $\tan(\theta) = \frac{-77}{36}$, and θ is in quadrant IV, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 6.94 meters, a frequency of 2.32 Hz, and a midline at $y = 4.9$ meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

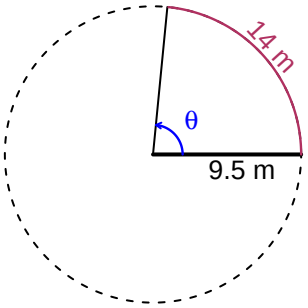
Name: Date:

Trig Final (Practice v17)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

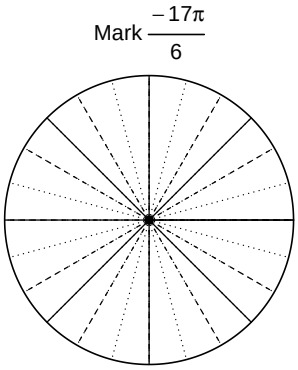
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 9.5 meters. The arc length is 14 meters. What is the angle measure in radians?

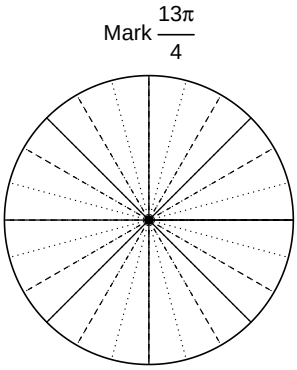


Question 2

Consider angles $\frac{-17\pi}{6}$ and $\frac{13\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-17\pi}{6}\right)$ and $\cos\left(\frac{13\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-17\pi/6)$



Find $\cos(13\pi/4)$

Question 3

If $\tan(\theta) = \frac{24}{7}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 7.99 Hz, an amplitude of 6.98 meters, and a midline at $y = 4.54$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

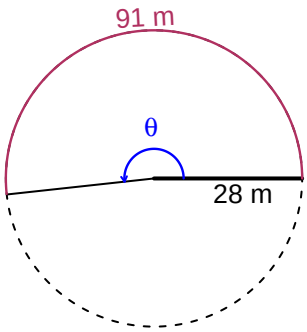
Name: Date:

Trig Final (Practice v18)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

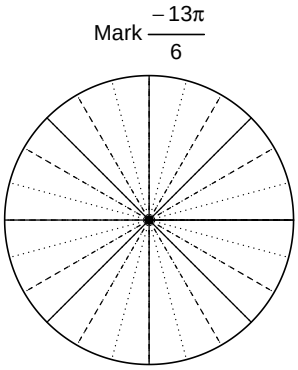
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 28 meters. The arc length is 91 meters. What is the angle measure in radians?

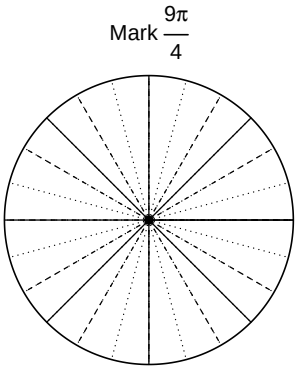


Question 2

Consider angles $\frac{-13\pi}{6}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-13\pi}{6}\right)$ and $\cos\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-13\pi/6)$



Find $\cos(9\pi/4)$

Question 3

If $\cos(\theta) = \frac{-20}{29}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 8.28$ meters, a frequency of 5.41 Hz, and an amplitude of 2.6 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

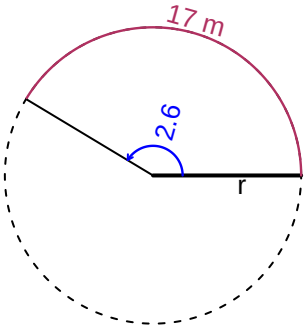
Name: Date:

Trig Final (Practice v19)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

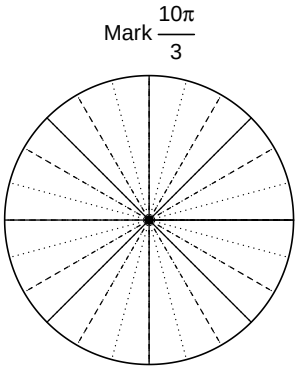
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 2.6 radians. The arc length is 17 meters. How long is the radius in meters?

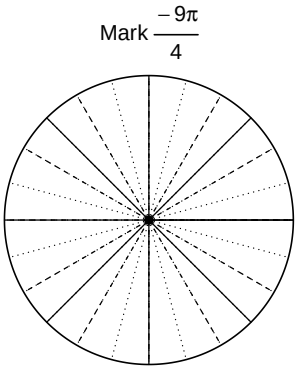


Question 2

Consider angles $\frac{10\pi}{3}$ and $\frac{-9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{10\pi}{3}\right)$ and $\sin\left(\frac{-9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(10\pi/3)$



Find $\sin(-9\pi/4)$

Question 3

If $\cos(\theta) = \frac{-39}{89}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 8.08 meters, a midline at $y = -2.71$ meters, and a frequency of 4.31 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

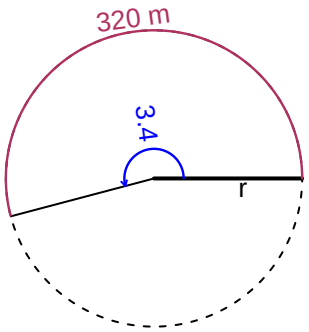
Name: Date:

Trig Final (Practice v20)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

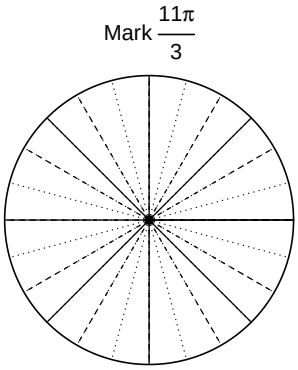
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3.4 radians. The arc length is 320 meters. How long is the radius in meters?

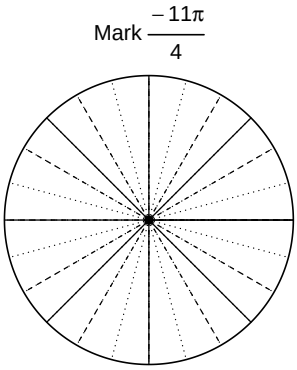


Question 2

Consider angles $\frac{11\pi}{3}$ and $\frac{-11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{11\pi}{3}\right)$ and $\cos\left(\frac{-11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(11\pi/3)$



Find $\cos(-11\pi/4)$

Question 3

If $\cos(\theta) = \frac{-39}{89}$, and θ is in quadrant II, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 3.51 meters, a frequency of 6.66 Hz, and a midline at $y = -7.84$ meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

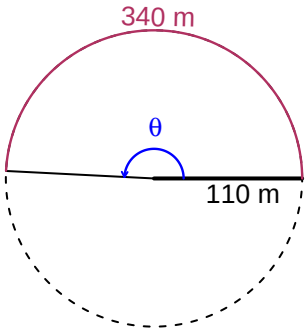
Name: Date:

Trig Final (Practice v21)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

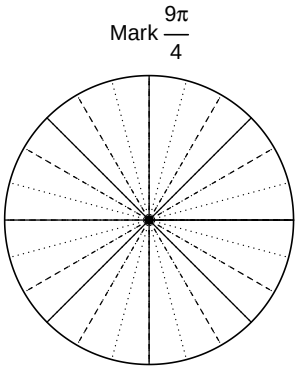
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 110 meters. The arc length is 340 meters. What is the angle measure in radians?

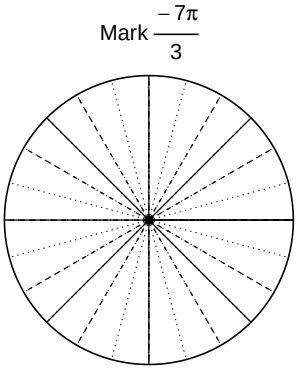


Question 2

Consider angles $\frac{9\pi}{4}$ and $\frac{-7\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{9\pi}{4}\right)$ and $\sin\left(\frac{-7\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(9\pi/4)$



Find $\sin(-7\pi/3)$

Question 3

If $\sin(\theta) = \frac{15}{17}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 7.55 Hz, a midline at $y = -5.01$ meters, and an amplitude of 2.19 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

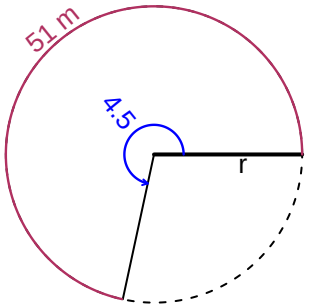
Name: Date:

Trig Final (Practice v22)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

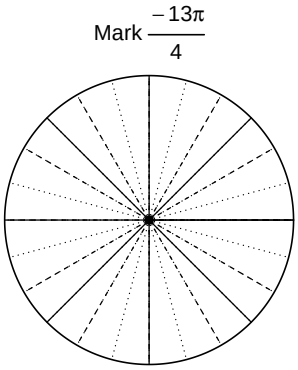
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 4.5 radians. The arc length is 51 meters. How long is the radius in meters?

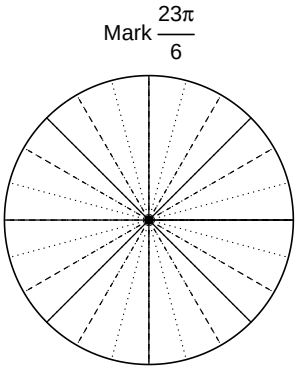


Question 2

Consider angles $\frac{-13\pi}{4}$ and $\frac{23\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-13\pi}{4}\right)$ and $\cos\left(\frac{23\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(-13\pi/4)$



Find $\cos(23\pi/6)$

Question 3

If $\tan(\theta) = \frac{-12}{5}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 2.44 Hz, an amplitude of 5.34 meters, and a midline at $y = -8.27$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

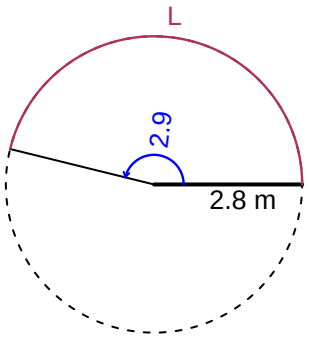
Name: Date:

Trig Final (Practice v23)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

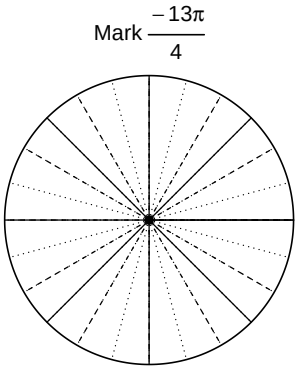
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 2.9 radians. The radius is 2.8 meters. How long is the arc in meters?

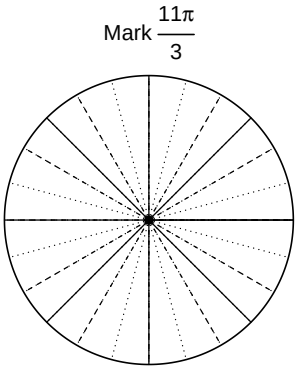


Question 2

Consider angles $\frac{-13\pi}{4}$ and $\frac{11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-13\pi}{4}\right)$ and $\cos\left(\frac{11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-13\pi/4)$



Find $\cos(11\pi/3)$

Question 3

If $\tan(\theta) = \frac{-77}{36}$, and θ is in quadrant II, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -2$ meters, an amplitude of 8.06 meters, and a frequency of 5.39 Hz. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

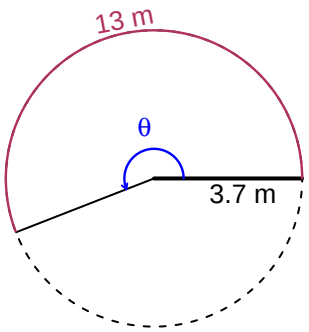
Name: Date:

Trig Final (Practice v24)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

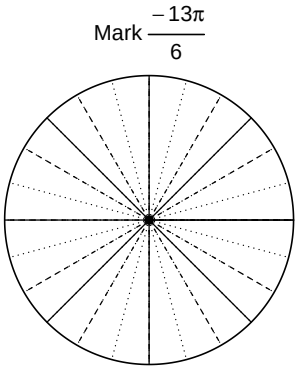
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 13 meters. The radius is 3.7 meters. What is the angle measure in radians?

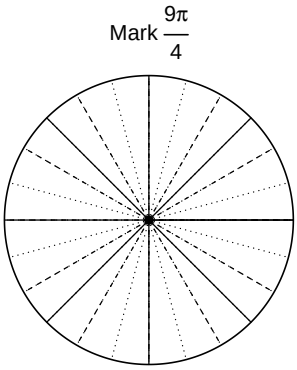


Question 2

Consider angles $\frac{-13\pi}{6}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-13\pi}{6}\right)$ and $\sin\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-13\pi/6)$



Find $\sin(9\pi/4)$

Question 3

If $\cos(\theta) = \frac{36}{85}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 5.59 Hz, a midline at $y = -7.51$ meters, and an amplitude of 4.53 meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

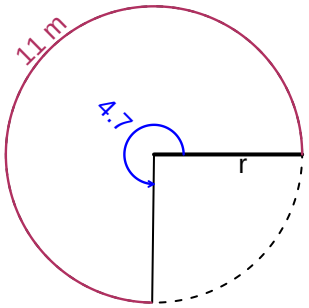
Name: Date:

Trig Final (Practice v25)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

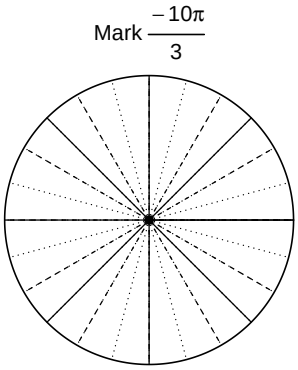
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 11 meters. The angle measure is 4.7 radians. How long is the radius in meters?

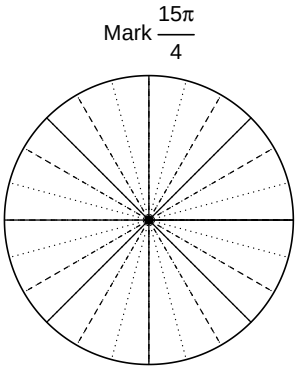


Question 2

Consider angles $\frac{-10\pi}{3}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-10\pi}{3}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-10\pi/3)$



Find $\sin(15\pi/4)$

Question 3

If $\cos(\theta) = \frac{-16}{65}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 7.01 Hz, a midline at $y = 3.25$ meters, and an amplitude of 8.53 meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

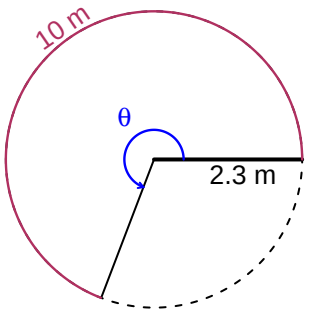
Name: Date:

Trig Final (Practice v26)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

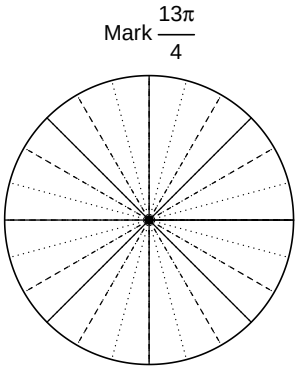
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 2.3 meters. The arc length is 10 meters. What is the angle measure in radians?

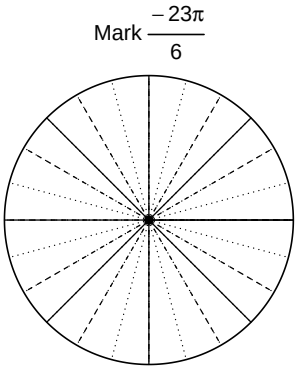


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-23\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{13\pi}{4}\right)$ and $\cos\left(\frac{-23\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(13\pi/4)$



Find $\cos(-23\pi/6)$

Question 3

If $\sin(\theta) = \frac{-45}{53}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 7.89 meters, a midline at $y = -5.35$ meters, and a frequency of 4.23 Hz. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

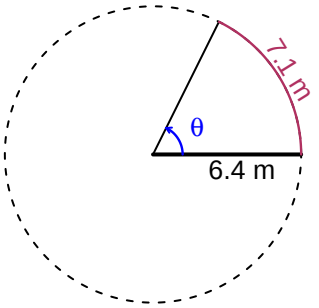
Name: Date:

Trig Final (Practice v27)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

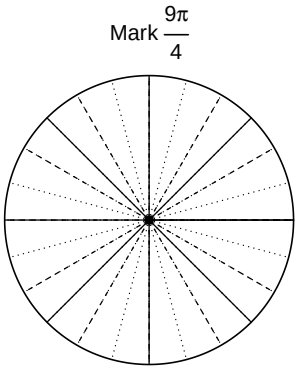
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 6.4 meters. The arc length is 7.1 meters. What is the angle measure in radians?

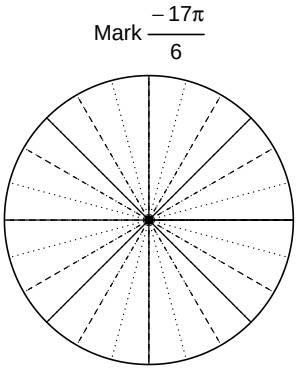


Question 2

Consider angles $\frac{9\pi}{4}$ and $\frac{-17\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{9\pi}{4}\right)$ and $\cos\left(\frac{-17\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(9\pi/4)$



Find $\cos(-17\pi/6)$

Question 3

If $\cos(\theta) = \frac{-12}{37}$, and θ is in quadrant II, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -7.7$ meters, a frequency of 5.14 Hz, and an amplitude of 3.17 meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

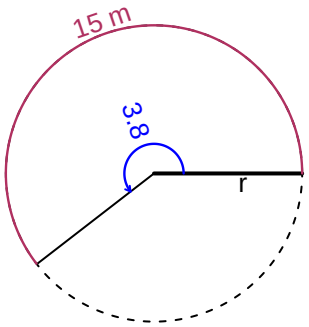
Name: Date:

Trig Final (Practice v28)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

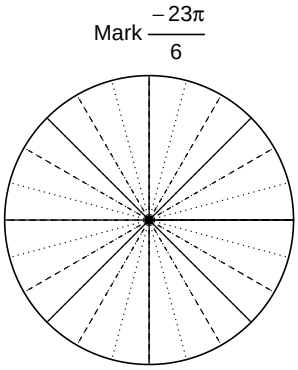
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3.8 radians. The arc length is 15 meters. How long is the radius in meters?

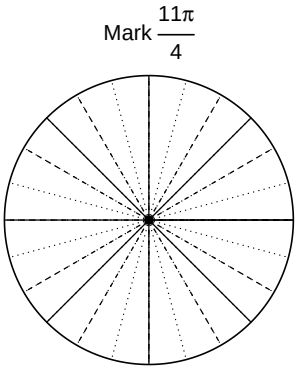


Question 2

Consider angles $\frac{-23\pi}{6}$ and $\frac{11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-23\pi}{6}\right)$ and $\sin\left(\frac{11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-23\pi/6)$



Find $\sin(11\pi/4)$

Question 3

If $\sin(\theta) = \frac{-45}{53}$, and θ is in quadrant III, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 8.08 Hz, an amplitude of 3.34 meters, and a midline at $y = -6.5$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

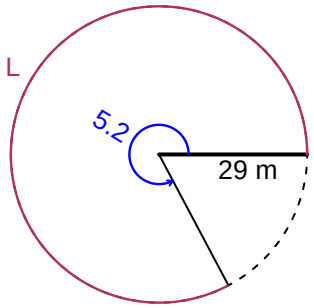
Name: Date:

Trig Final (Practice v29)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

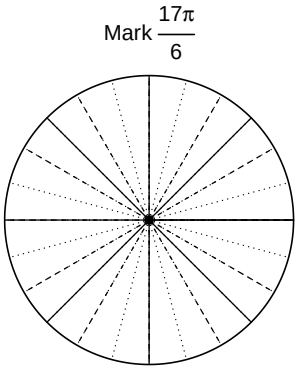
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 29 meters. The angle measure is 5.2 radians. How long is the arc in meters?

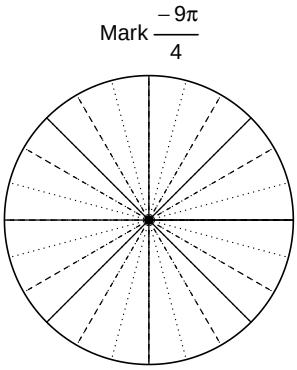


Question 2

Consider angles $\frac{17\pi}{6}$ and $\frac{-9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{17\pi}{6}\right)$ and $\cos\left(\frac{-9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(17\pi/6)$



Find $\cos(-9\pi/4)$

Question 3

If $\cos(\theta) = \frac{-65}{97}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 2.2 meters, a frequency of 4.7 Hz, and a midline at $y = -6.28$ meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

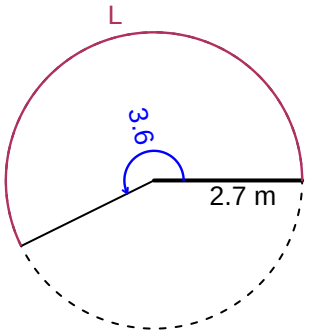
Name: Date:

Trig Final (Practice v30)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

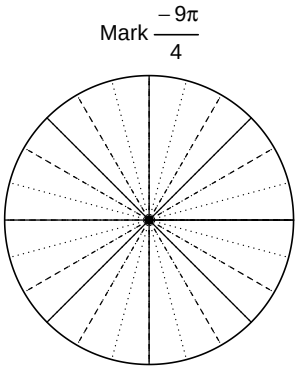
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3.6 radians. The radius is 2.7 meters. How long is the arc in meters?

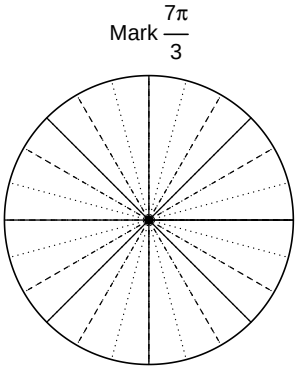


Question 2

Consider angles $\frac{-9\pi}{4}$ and $\frac{7\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-9\pi}{4}\right)$ and $\cos\left(\frac{7\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-9\pi/4)$



Find $\cos(7\pi/3)$

Question 3

If $\tan(\theta) = \frac{-40}{9}$, and θ is in quadrant IV, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 6.28 meters, a midline at $y = 2.77$ meters, and a frequency of 7.41 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

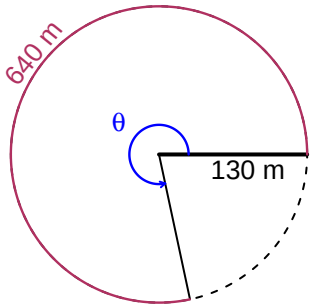
Name: Date:

Trig Final (Practice v31)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

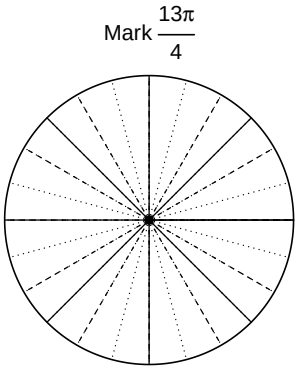
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 130 meters. The arc length is 640 meters. What is the angle measure in radians?

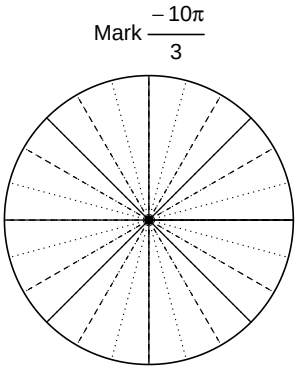


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-10\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{13\pi}{4}\right)$ and $\sin\left(\frac{-10\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(13\pi/4)$



Find $\sin(-10\pi/3)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 4.58 meters, a frequency of 8.81 Hz, and a midline at $y = -7.77$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

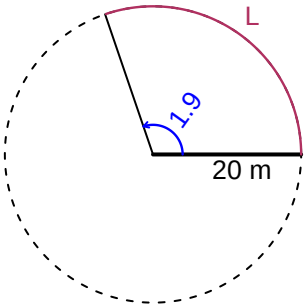
Name: Date:

Trig Final (Practice v32)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

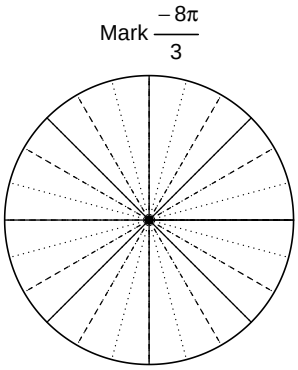
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 20 meters. The angle measure is 1.9 radians. How long is the arc in meters?

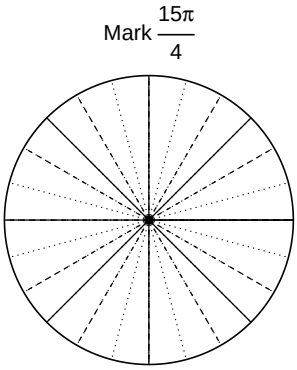


Question 2

Consider angles $\frac{-8\pi}{3}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-8\pi}{3}\right)$ and $\cos\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-8\pi/3)$



Find $\cos(15\pi/4)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 5.16 Hz, a midline at $y = -6.65$ meters, and an amplitude of 3.67 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

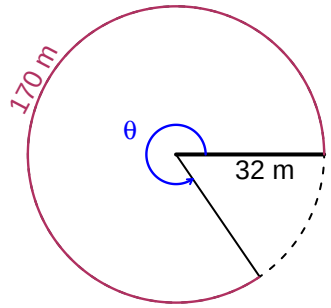
Name: Date:

Trig Final (Practice v33)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

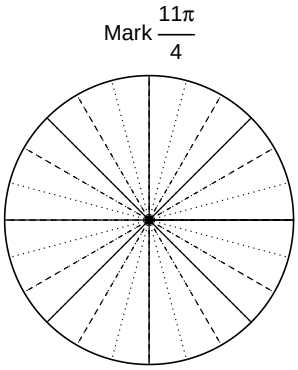
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 170 meters. The radius is 32 meters. What is the angle measure in radians?

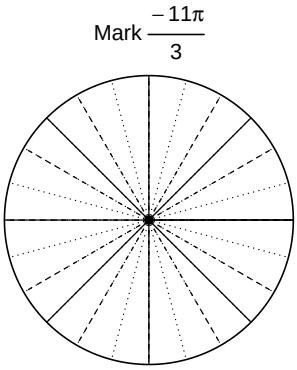


Question 2

Consider angles $\frac{11\pi}{4}$ and $\frac{-11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{11\pi}{4}\right)$ and $\sin\left(\frac{-11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(11\pi/4)$



Find $\sin(-11\pi/3)$

Question 3

If $\sin(\theta) = \frac{40}{41}$, and θ is in quadrant II, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 3.35$ meters, an amplitude of 8.48 meters, and a frequency of 6.4 Hz. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

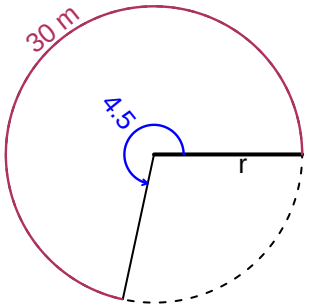
Name: Date:

Trig Final (Practice v34)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

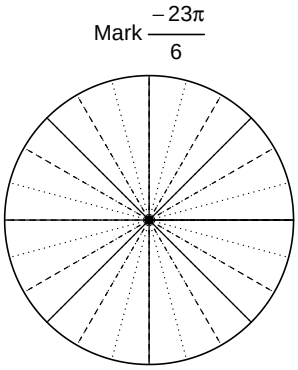
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 30 meters. The angle measure is 4.5 radians. How long is the radius in meters?

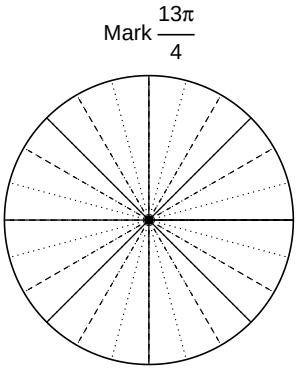


Question 2

Consider angles $\frac{-23\pi}{6}$ and $\frac{13\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-23\pi}{6}\right)$ and $\sin\left(\frac{13\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-23\pi/6)$



Find $\sin(13\pi/4)$

Question 3

If $\tan(\theta) = \frac{-24}{7}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 7.5 Hz, an amplitude of 4.6 meters, and a midline at $y = -5.88$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

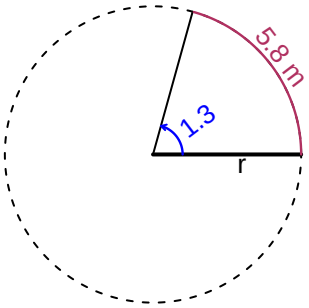
Name: Date:

Trig Final (Practice v35)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

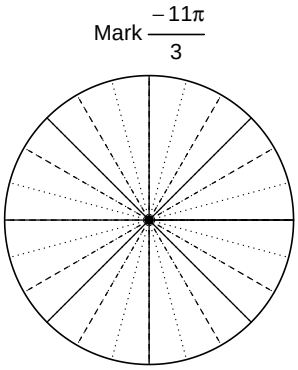
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 5.8 meters. The angle measure is 1.3 radians. How long is the radius in meters?

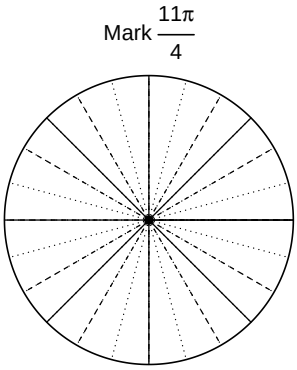


Question 2

Consider angles $\frac{-11\pi}{3}$ and $\frac{11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{3}\right)$ and $\cos\left(\frac{11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/3)$



Find $\cos(11\pi/4)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 8.4 Hz, a midline at $y = -3.68$ meters, and an amplitude of 7.35 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

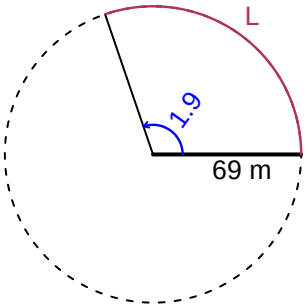
Name: Date:

Trig Final (Practice v36)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

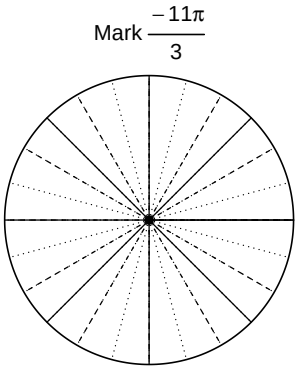
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 1.9 radians. The radius is 69 meters. How long is the arc in meters?

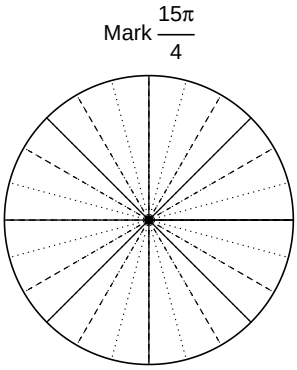


Question 2

Consider angles $\frac{-11\pi}{3}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{3}\right)$ and $\cos\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/3)$



Find $\cos(15\pi/4)$

Question 3

If $\sin(\theta) = \frac{80}{89}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 6.31 Hz, an amplitude of 7.9 meters, and a midline at $y = 3.54$ meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

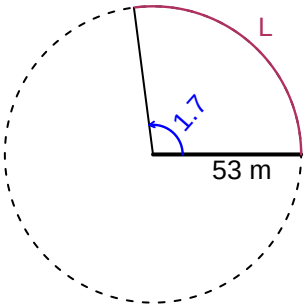
Name: Date:

Trig Final (Practice v37)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

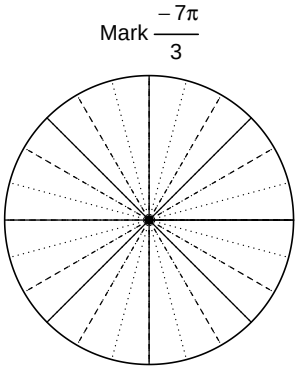
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 1.7 radians. The radius is 53 meters. How long is the arc in meters?

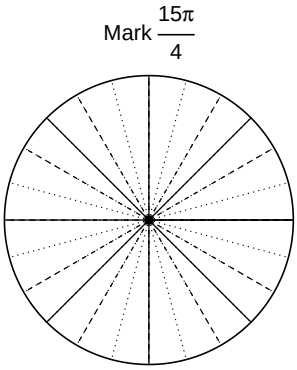


Question 2

Consider angles $\frac{-7\pi}{3}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-7\pi}{3}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-7\pi/3)$



Find $\sin(15\pi/4)$

Question 3

If $\sin(\theta) = \frac{-72}{97}$, and θ is in quadrant IV, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -6.77$ meters, an amplitude of 2.15 meters, and a frequency of 8.08 Hz. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

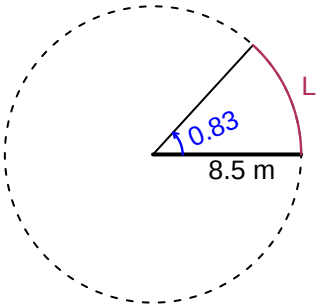
Name: Date:

Trig Final (Practice v38)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

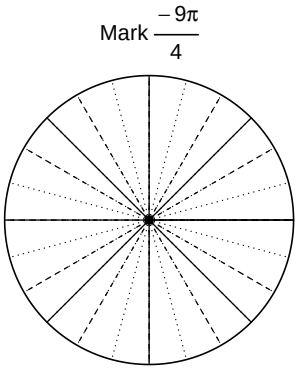
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 0.83 radians. The radius is 8.5 meters. How long is the arc in meters?

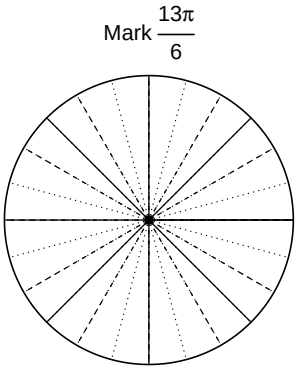


Question 2

Consider angles $\frac{-9\pi}{4}$ and $\frac{13\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-9\pi}{4}\right)$ and $\sin\left(\frac{13\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(-9\pi/4)$



Find $\sin(13\pi/6)$

Question 3

If $\sin(\theta) = \frac{-77}{85}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 6.62 Hz, an amplitude of 4.8 meters, and a midline at $y = -7.75$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

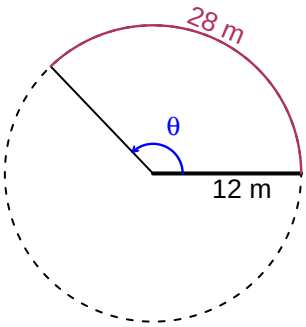
Name: Date:

Trig Final (Practice v39)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

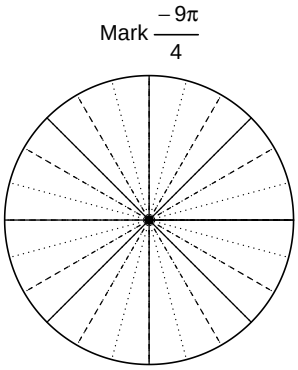
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 12 meters. The arc length is 28 meters. What is the angle measure in radians?

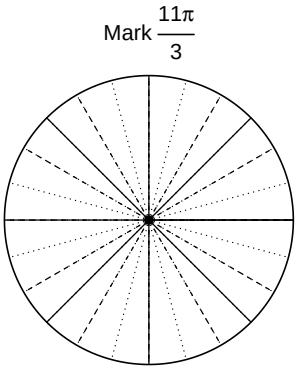


Question 2

Consider angles $\frac{-9\pi}{4}$ and $\frac{11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-9\pi}{4}\right)$ and $\sin\left(\frac{11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(-9\pi/4)$



Find $\sin(11\pi/3)$

Question 3

If $\sin(\theta) = \frac{-80}{89}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -2.17$ meters, a frequency of 8.76 Hz, and an amplitude of 6.46 meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

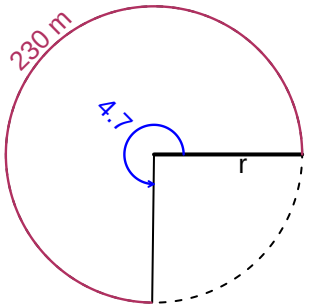
Name: Date:

Trig Final (Practice v40)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

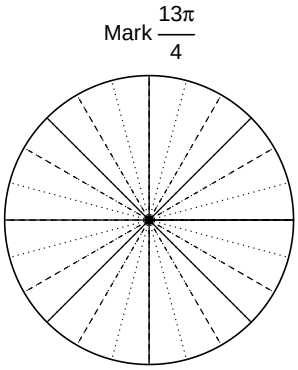
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 4.7 radians. The arc length is 230 meters. How long is the radius in meters?

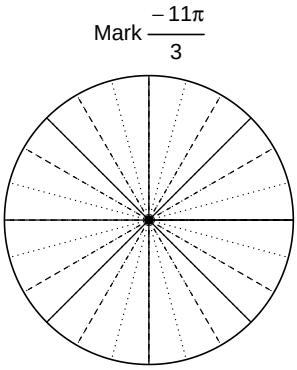


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{13\pi}{4}\right)$ and $\sin\left(\frac{-11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(13\pi/4)$



Find $\sin(-11\pi/3)$

Question 3

If $\sin(\theta) = \frac{-56}{65}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 3.07 Hz, an amplitude of 6.77 meters, and a midline at $y = -4.13$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

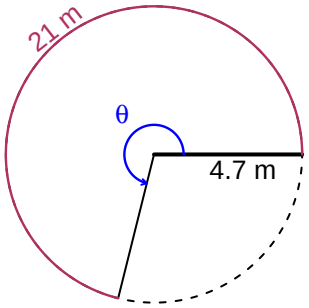
Name: Date:

Trig Final (Practice v41)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

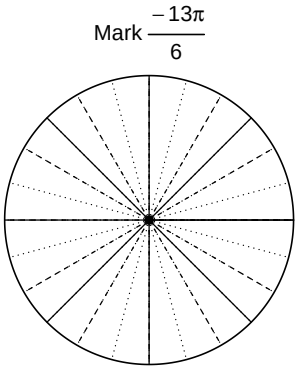
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 4.7 meters. The arc length is 21 meters. What is the angle measure in radians?

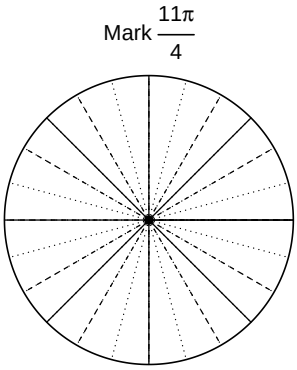


Question 2

Consider angles $\frac{-13\pi}{6}$ and $\frac{11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-13\pi}{6}\right)$ and $\sin\left(\frac{11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-13\pi/6)$



Find $\sin(11\pi/4)$

Question 3

If $\tan(\theta) = \frac{-63}{16}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -5.22$ meters, an amplitude of 2.17 meters, and a frequency of 6.45 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

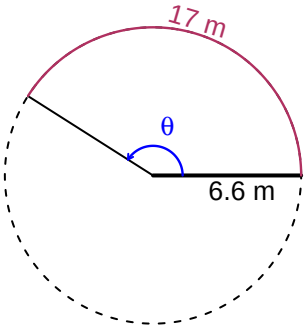
Name: Date:

Trig Final (Practice v42)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

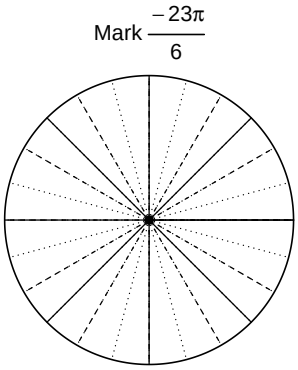
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 6.6 meters. The arc length is 17 meters. What is the angle measure in radians?

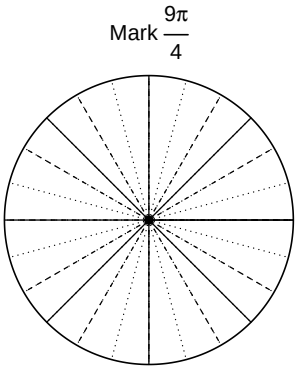


Question 2

Consider angles $\frac{-23\pi}{6}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-23\pi}{6}\right)$ and $\cos\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-23\pi/6)$



Find $\cos(9\pi/4)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 3.83 meters, a midline at $y = -8.43$ meters, and a frequency of 2.15 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

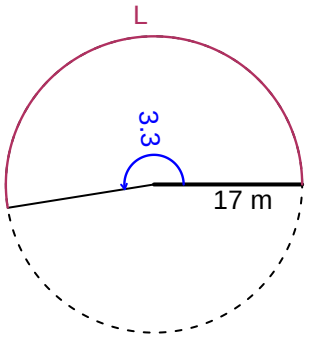
Name: Date:

Trig Final (Practice v43)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

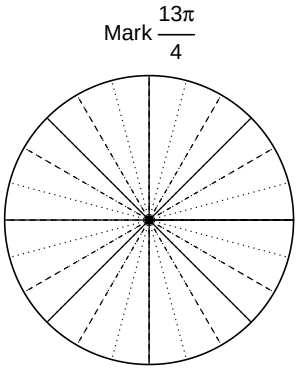
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3.3 radians. The radius is 17 meters. How long is the arc in meters?

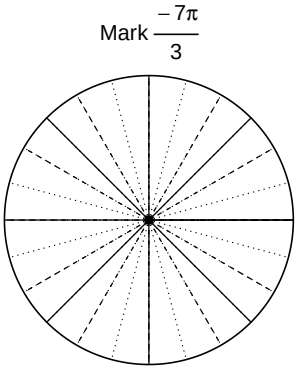


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-7\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{13\pi}{4}\right)$ and $\cos\left(\frac{-7\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(13\pi/4)$



Find $\cos(-7\pi/3)$

Question 3

If $\sin(\theta) = \frac{-77}{85}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 6.65 meters, a frequency of 2.43 Hz, and a midline at $y = -8.33$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

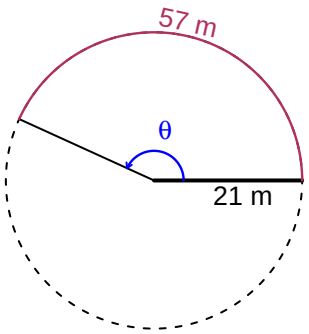
Name: Date:

Trig Final (Practice v44)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

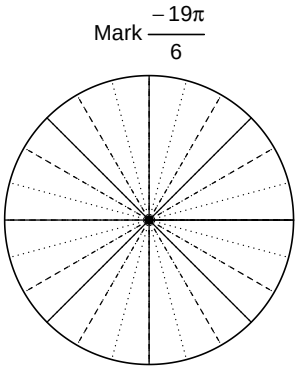
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 21 meters. The arc length is 57 meters. What is the angle measure in radians?

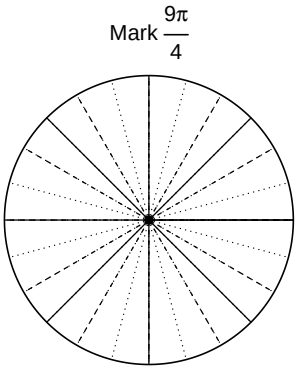


Question 2

Consider angles $\frac{-19\pi}{6}$ and $\frac{9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-19\pi}{6}\right)$ and $\cos\left(\frac{9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(-19\pi/6)$



Find $\cos(9\pi/4)$

Question 3

If $\tan(\theta) = \frac{12}{5}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 4.99$ meters, a frequency of 3.72 Hz, and an amplitude of 7.63 meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

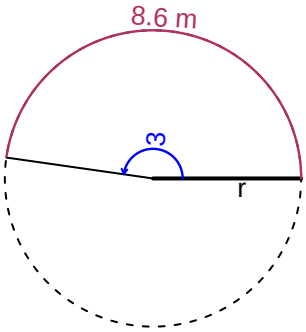
Name: Date:

Trig Final (Practice v45)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

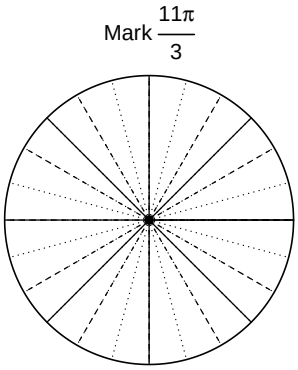
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 3 radians. The arc length is 8.6 meters. How long is the radius in meters?

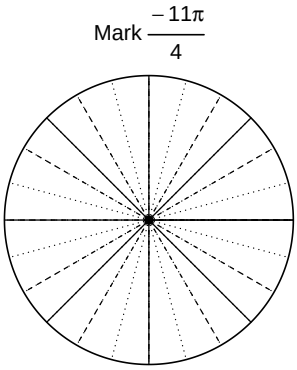


Question 2

Consider angles $\frac{11\pi}{3}$ and $\frac{-11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{11\pi}{3}\right)$ and $\sin\left(\frac{-11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(11\pi/3)$



Find $\sin(-11\pi/4)$

Question 3

If $\cos(\theta) = \frac{-9}{41}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 3 Hz, an amplitude of 6.29 meters, and a midline at $y = 8.27$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

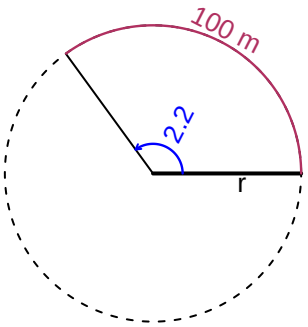
Name: Date:

Trig Final (Practice v46)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

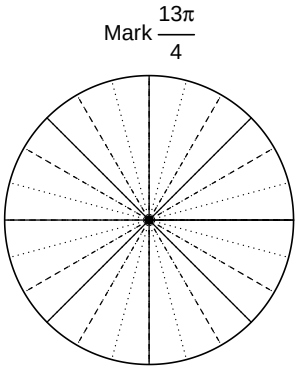
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 100 meters. The angle measure is 2.2 radians. How long is the radius in meters?

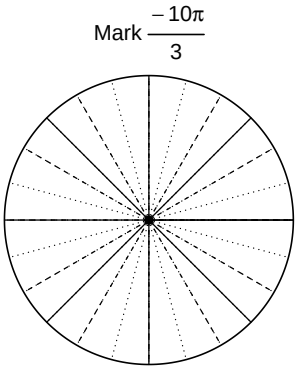


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-10\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{13\pi}{4}\right)$ and $\sin\left(\frac{-10\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(13\pi/4)$



Find $\sin(-10\pi/3)$

Question 3

If $\cos(\theta) = \frac{36}{85}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 4.27 Hz, a midline at $y = -5.87$ meters, and an amplitude of 8.82 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

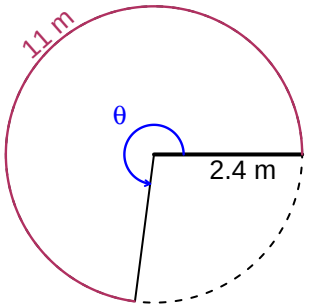
Name: Date:

Trig Final (Practice v47)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

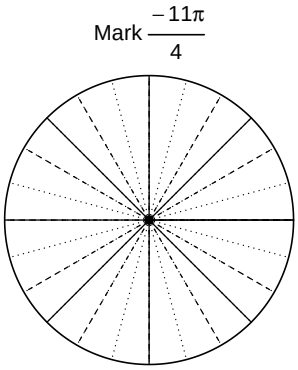
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 2.4 meters. The arc length is 11 meters. What is the angle measure in radians?

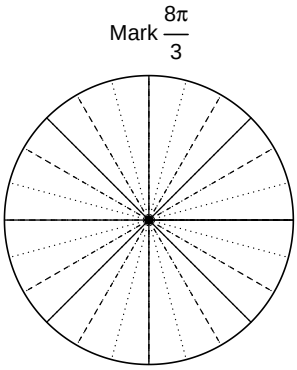


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{8\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{4}\right)$ and $\cos\left(\frac{8\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/4)$



Find $\cos(8\pi/3)$

Question 3

If $\sin(\theta) = \frac{-72}{97}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 4.47 meters, a frequency of 7.12 Hz, and a midline at $y = 2.13$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

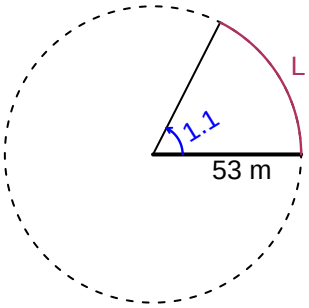
Name: Date:

Trig Final (Practice v48)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

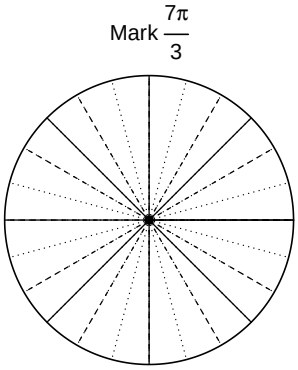
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 53 meters. The angle measure is 1.1 radians. How long is the arc in meters?

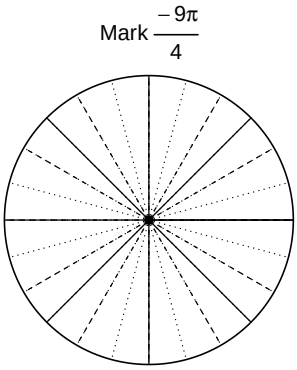


Question 2

Consider angles $\frac{7\pi}{3}$ and $\frac{-9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{7\pi}{3}\right)$ and $\cos\left(\frac{-9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(7\pi/3)$



Find $\cos(-9\pi/4)$

Question 3

If $\tan(\theta) = \frac{-80}{39}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 7.96 meters, a midline at $y = 2.11$ meters, and a frequency of 5.79 Hz. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

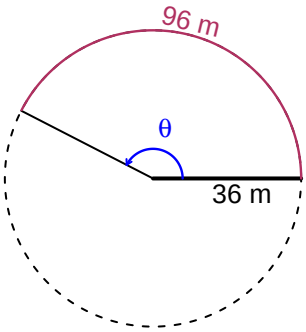
Name: Date:

Trig Final (Practice v49)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

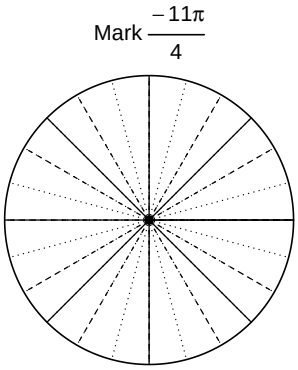
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 36 meters. The arc length is 96 meters. What is the angle measure in radians?

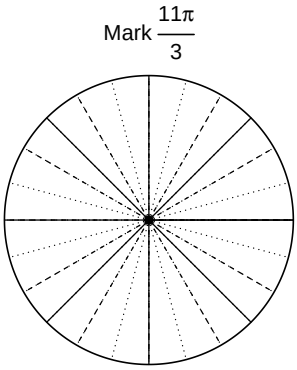


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{4}\right)$ and $\cos\left(\frac{11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/4)$



Find $\cos(11\pi/3)$

Question 3

If $\sin(\theta) = \frac{63}{65}$, and θ is in quadrant II, determine an exact value for $\cos(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 6.82 Hz, a midline at $y = 2.04$ meters, and an amplitude of 5.74 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

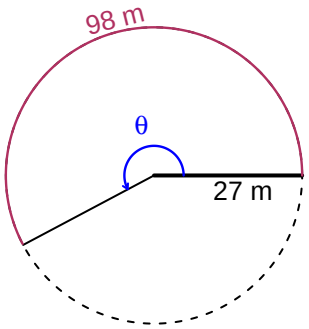
Name: Date:

Trig Final (Practice v50)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

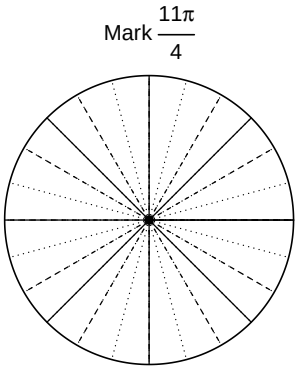
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 98 meters. The radius is 27 meters. What is the angle measure in radians?

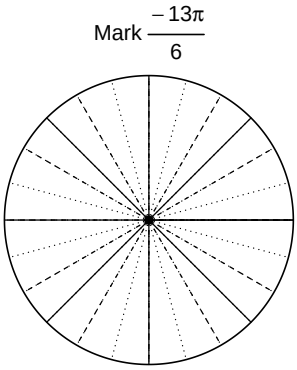


Question 2

Consider angles $\frac{11\pi}{4}$ and $\frac{-13\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{11\pi}{4}\right)$ and $\sin\left(\frac{-13\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\cos(11\pi/4)$



Find $\sin(-13\pi/6)$

Question 3

If $\cos(\theta) = \frac{-5}{13}$, and θ is in quadrant II, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 8.95 Hz, a midline at $y = -4.65$ meters, and an amplitude of 3.23 meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).